

DUKE ENERGY CAROLINAS

Analysis of Energy Efficiency Portfolio

Docket No. 2013-298-E

3/1/2019

Settlement Agreement Analysis of EE Portfolio

Executive Summary

In the Settlement Agreement ("New Portfolio Settlement") approved by the South Carolina Public Service Commission on December 11, 2013, (Docket No. 2013-298-E), Duke Energy Carolinas, LLC ("DEC" or the "Company") agreed to provide a report estimating the energy efficiency costs, participation, and load impacts associated with fulfilling the aspirational energy efficiency goals established in the Settlement Agreement reached in Docket No. 2011-158-E ("Merger Settlement").

This report presents an update to the report presented in 2018 as part of the Rider 10 Update filing. The Actual Portfolio presented below includes actual results from 2014 through 2018 as of March 1, 2019.

As part of the New Portfolio Settlement, the Company agreed to develop a study designed to assess the feasibility and estimated cost associated with its achievement of EE goals established in the settlement agreement entered into between the South Carolina Coastal Conservation League, the Southern Alliance for Clean Energy, the Environmental Defense Fund and Duke Energy Corporation, Progress Energy, Inc., DEC and Duke Energy Progress, Inc. in Commission Docket Nos. 2011-158-E and 2011-68-E ("Merger Settlement") (i.e., an annual savings target of one percent (1%) of the previous year's retail electricity sales beginning in 2015 and a cumulative savings target of seven percent (7%) of retail electricity sales over the five-year time period of 2014-2018). The study will do the following:

- The study will identify the demand-side management ("DSM") and EE programs that are both technically and economically feasible and are projected to be necessary to demonstrate a good faith effort by the Company to achieve the EE goals.
- The study will also estimate the participation and expected energy and/or capacity savings for each program, as well as projected annual program costs.
- A draft of the study will be provided to the DEC EE Collaborative for review and comment no later than December 31, 2014.
- The study will be filed for informational purposes in the first DSM/EE rider proceeding to occur after the study is completed and will be updated annually in each DSM/EE rider proceeding during the 2015-2019 period.

Please note that DEC is only providing analysis of the EE portion of this agreement because the original settlement agreement referred only to KWh achievements and DEC does not claim any KWh achievements resulting from DSM programs.

Target Savings

In order to calculate the energy savings targeted in the Merger Settlement's aspirational efficiency goals, DEC started with the actual overall DEC System Retail Sales through 2018. The results of this analysis are shown in Table 1 below. Please note that these sales volumes have been increased by the line losses in order to correctly compare the "at the plant" EE savings with the prior year retail sales.

Table 1
DEC System Retail Sales and EE Savings Forecast

Year	Actual Portfolio Impacts, MWh	Cumulative Actual Portfolio Impacts, MWh	Prior Year Actual Retail Sales at Plant	Actual Portfolio as % of Prior Year Retail Sales	Total Cumulative Impacts since 2009, MWh	Cumulative since 2009 as % of Prior Year Retail Sales
2013					2,224,404	
2014	463,648	463,648	80,198,922	0.58%	2,688,052	3.35%
2015	560,296	1,023,944	83,090,540	0.67%	3,248,348	3.91%
2016	655,472	1,679,416	83,746,166	0.78%	3,903,820	4.66%
2017	819,509	2,498,924	83,954,411	0.98%	4,723,329	5.63%
2018	781,581	3,280,505	81,802,108	0.96%	5,504,910	6.73%

Note: For the purpose of this analysis, given the difficulty in estimating Opt Outs, this table represents Total Retail Sales rather than reflecting only sales from customers eligible to participate in the Company's EE programs.

As you can see from the "Actual Portfolio as % of Prior Year Retail Sales" column above, the actual results from 2014, through 2018 achieved an average savings of approximately 0.79% of the prior year retail sales during the period 2014-18 and the cumulative since 2009 actual results achieved approximately 6.73% of prior year retail sales.

Table 2 below presents a summary of the annual KWh, Participants and Program costs as of March 1, 2019.

Based on the Company's interpretation of the Settlement Agreement, this report will fulfill the final reporting requirements under the agreement.

Table 2

Actual Portfolio - 2014-18

Actual Portions - 2014-2018															
Program Name	2014			2015			2016			2017			2018		
	KWh	Participants	Program \$	KWh	Participants	Program \$	KWh	Participants	Program \$	KWh	Participants	Program \$	KWh	Participants	Program \$
Residential Programs															
Appliance Recycling Program	9,695,099	9,753	\$ 1,512,066	10,548,144	9,797	\$ 1,533,087	317,618	263	\$ (97,391)	-	-	\$ 5,297	-	-	\$ -
Energy Efficiency Education	6,991,608	27,891	\$ 1,956,496	4,417,898	19,582	\$ 2,049,791	6,441,283	30,170	\$ 2,121,607	5,932,086	27,785	\$ 2,072,267	4,889,354	22,901	\$ 1,983,960
Energy Efficient Appliances and Devices	187,992,480	5,069,137	\$ 14,701,023	148,582,385	3,826,679	\$ 12,024,262	150,463,925	3,868,812	\$ 24,013,998	236,434,175	6,819,189	\$ 30,275,929	376,600,037	10,242,945	\$ 42,579,851
HVAC Energy Efficiency	6,501,563	12,866	\$ 4,774,663	6,810,489	13,489	\$ 5,404,412	8,452,025	19,075	\$ 7,821,844	9,812,343	27,311	\$ 7,387,527	9,871,610	25,293	\$ 6,936,157
Income Qualified Energy Efficiency and Weatherization Assistance	3,447,204	9,082	\$ 3,909,870	3,174,336	6,836	\$ 2,232,000	4,801,478	9,339	\$ 4,780,115	5,343,626	11,726	\$ 5,483,401	5,211,991	10,081	\$ 6,465,702
Multi-Family Energy Efficiency	10,706,959	162,241	\$ 1,438,728	14,970,512	232,495	\$ 2,088,423	15,909,865	269,671	\$ 2,512,199	19,445,278	356,003	\$ 3,161,750	21,711,605	430,474	\$ 3,594,938
My Home Energy Report [1]	2,756,088	26,234	\$ 8,264,278	82,764,739	419,807	\$ 9,824,522	54,793,497	34,554	\$ 10,799,506	27,798,930	192,029	\$ 13,786,373	9,244,712	37,570	\$ 13,220,883
Energy Assessments	10,599,335	10,753	\$ 3,595,650	10,293,765	10,443	\$ 3,079,275	7,389,091	28,853	\$ 2,672,325	8,160,693	52,546	\$ 2,902,310	8,464,141	55,978	\$ 2,827,387
Non Residential Programs															
Business Energy Report	-	-	\$ -	-	-	\$ 124,636	5,561,349	14,947	\$ 262,432	-	-	\$ 126,219	-	-	\$ -
Energy Wise for Business	-	-	\$ -	18,374	27	\$ 1,544,003	718,623	1,056	\$ 464,302	2,943,906	4,326	\$ 2,475,377	2,498,948	4,604	\$ 3,053,243
Non Residential Smart Saver Custom Technical Assessments	9,806,357	75	\$ 1,449,212	765,303	2,501	\$ 655,585	19,486,669	199	\$ 2,026,728	18,151,417	9	\$ 2,135,919	78,856	218	\$ 403,829
Non Residential Smart Saver Custom	92,873,754	32,451	\$ 8,100,681	83,995,665	21,318	\$ 9,879,256	59,947,844	34,098	\$ 7,328,748	47,617,571	40,134	\$ 7,280,168	35,952,744	23,345	\$ 6,039,114
Non Residential Smart Saver Energy Efficient Food Service Products	3,344,251	2,325	\$ 198,756	2,521,118	2,304	\$ 191,797	5,962,012	3,574	\$ 323,048	2,269,571	2,730	\$ 305,687	2,312,823	2,910	\$ 234,351
Non Residential Smart Saver Energy Efficient HVAC Products	6,671,026	925,410	\$ 812,536	7,721,743	3,014,385	\$ 1,137,153	4,738,429	4,189,078	\$ 1,469,808	4,845,799	3,016,407	\$ 1,557,542	4,866,909	2,189,314	\$ 1,615,564
Non Residential Smart Saver Energy Efficient Lighting Products	87,543,857	295,023	\$ 6,706,253	86,886,057	305,298	\$ 11,289,537	214,656,707	952,324	\$ 39,533,875	338,405,058	2,291,434	\$ 66,551,086	222,269,745	2,854,234	\$ 25,800,299
Non Residential Energy Efficient Pumps and Drives Products	9,287,238	5,258	\$ 582,689	6,026,543	3,805	\$ 464,115	6,235,851	3,361	\$ 470,813	8,676,974	4,361	\$ 527,539	4,539,576	2,480	\$ 276,603
Non Residential Energy Efficient ITEE	177,482	1,364	\$ 25,666	7,423,871	957	\$ 714,361	3,517,181	759	\$ 284,529	4,775	45	\$ 60,885	29,741	280	\$ 36,197
Non Residential Energy Efficient Process Equipment Products	945,548	1,450	\$ 89,586	1,078,956	1,764	\$ 88,343	782,826	1,351	\$ 125,674	1,151,200	8,936	\$ 161,937	558,449	3,339	\$ 67,100
Non Residential Smart Saver Performance Incentive	-	-	\$ -	-	-	\$ -	-	34,795	\$ 14,557	19	\$ 313,256	3,912,424	118	\$ 475,901	
Small Business Energy Saver	4,759,466	4,023,251	\$ 1,023,823	75,257,886	63,541,107	\$ 13,922,049	83,192,163	70,239,423	\$ 15,328,796	89,762,387	79,986,749	\$ 17,318,666	78,261,757	4,194,029	\$ 15,939,918
Smart Energy in Offices	9,468,233	24,883,395	\$ 1,152,092	7,038,455	41,795,528	\$ 1,456,572	2,103,553	46,628,788	\$ 1,059,414	(7,259,793)	26,824,711	\$ 884,119	(9,705,594)	4,194,003	\$ 214,783
Totals	463,647,552	35,497,959	\$ 58,294,067	560,296,239	113,228,722	\$ 79,703,179	655,471,989	126,339,095	\$ 123,337,165	819,508,549	119,666,450	\$ 164,783,255	781,580,827	93,593,726	\$ 131,765,781

Note: Negative KWh and Participants caused by treatment of programs with one-year measure life as incremental annual instead of year-end capability.